

Name: _____

Inequalities

Exercise 1: Solve each of the following inequalities algebraically. Write your answer in interval notation

1) $x+1 \geq -2$

2) $2 > 0.2x - 1$

3) $2x - 3 < 4$

4) $4 - 2x \geq 8$

5) $x+1 < 3x-4$

6) $3 > 6 - 3x$

7) $2x+3 > 4x-2$

8) $0.4x < x+6$

9) $4 < \frac{1}{4}x + 6$

10) $x \leq \frac{1}{2}x - 2$

11) $2 \leq x+1 < 7$

12) $-3 < x+5 < 2$

13) $3 < 2x+1 < 9$

14) $1 < 5+3x < 2$

15) $2 < 6 - 2x \leq 4$

16) $3 < 4 - x < 8$

Exercise 2: For the following two problems, break apart the inequality, solve each piece, and then put your answers together at the end.

1) $x - 3 < 2x + 1 < 4x - 1$

2) $2x - 3 < x + 5 < 3x + 1$

Exercise 3: The plans for a circular plastic part in a medical instrument require a diameter of 1.5 in. with a tolerance of ± 0.2 in. A machinist finds that the diameter is now 1.73 in. By how much should the machinist decrease the diameter?

Exercise 4: A strip of wood is to be 17 cm. with a tolerance of ± 0.15 cm. How much should be trimmed from a strip 18 cm long to allow it to meet specifications?